Claims

1. The use of a mixture (M) comprising

(a) from 40 to 70 % by volume of an inorganic powder (IP) based on the total volume of the mixture (M),

(b) from 30 to 60 % by volume based on the total volume of the mixture (M) of a binder (B) comprising

(b1) from 50 to 96 % by weight of at least one polyoxymethylene (POM) based on the total weight of the binder (B),

(b2) from 2 to 35 % by weight of at least one polyolefin (PO) based on the total weight of the binder (B),

(b3) from 2 to 40 % by weight of at least one further polymer (FP) based on the total weight of the binder (B)

in a fused filament fabrication process.

2. The use according to claim 1 wherein the mixture (M) comprises as component (c) from 0.1 to 5 % by volume of at least one dispersant based on the total volume of the mixture (M).

3. The use according to any one of claims 1 or 2, wherein the inorganic powder (IP) is a powder of at least one inorganic material selected from the group consisting of a metal, a metal alloy and a ceramic material.

4. The use according to any one of claims 1 to 3, wherein component (b1) is a polyoxymethylene (POM) copolymer which is prepared by polymerization of

- from 88 to 99 mol-% of a formaldehyde source (b1a),
- from 0.5 to 6 mol-% of at least one first comonomer (b1b) of the general formula (II)

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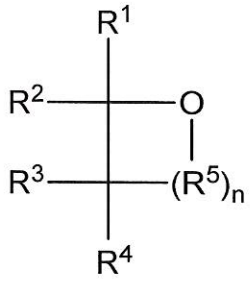


(II),

wherein

R^1 to R^4 are each independently of one another selected from the group consisting of H, C_1-C_4-alkyl and halogen-substituted C_1-C_4-alkyl;

R^5 is selected from the group consisting of a chemical bond, a (–$CR^{5a}R^{5b}$–) group and a (-$CR^{5a}R^{5b}O$–) group,

wherein

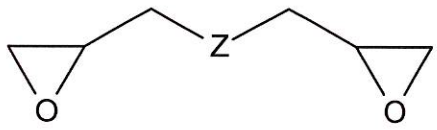
R^{5a} and R^{5b} are each independently of one another selected from the group consisting of H and unsubstituted or at least monosubstituted C_1-C_4-alkyl,

wherein the substituents are selected from the group consisting of F, Cl, Br, OH and C_1-C_4-alkyl;

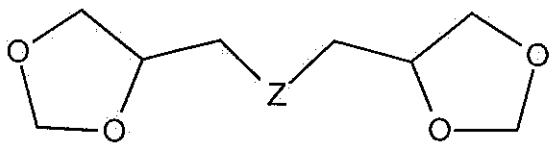
n is 0, 1, 2 or 3;

and

- from 0.5 to 6 mol-% of at least one second comonomer (b1c) selected from the group consisting of a compound of formula (III) and a compound of formula (IV)



(III),



(IV),

wherein

Z is selected from the group consisting of a chemical bond, an (-O-) group and an (-O-R^6-O-) group,

wherein

R^6 is selected from the group consisting of unsubstituted C_1-C_8-alkylene and C_3-C_8-cycloalkylene.

5. The use according to any one of claims 1 to 4, wherein the at least one further polymer (FP) is selected from the group consisting of a polyether, a polyurethane, a polyepoxide, a polyamide, a vinyl aromatic polymer, a poly(vinyl ester), a poly(vinyl ether), a poly(alkyl (meth)acrylate) and copolymers thereof.

6. The use according to any one of claims 1 to 5, wherein the particle size of the inorganic powder (IP) is from 0.1 to 80 µm.

7. A process for the production of a three-dimensional green body by a fused filament fabrication process comprising the steps

i) providing the mixture (M) according to any one of claims 1 to 6 to a nozzle,
ii) heating the mixture (M) to a temperature (T_M),
iii) depositing the mixture (M) into a build chamber using a layer-based additive technique to form the three-dimensional green body.

8. The process according to claim 7, wherein the temperature (T_M) in step ii) is from 140 to 240 °C.

9. The process according to any one of claims 7 or 8, wherein step iii) is followed by a step iv), in which at least part of the binder (B) is removed from the three-dimensional green body to form a three-dimensional brown body.